



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER OF PATENTS AND TRADEMARKS  
Washington, D.C. 20231  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/383,828	08/27/1999	EVREN ERYUREK	R11.12-0685	7087

7590 11/05/2002

JUDSON K CHAMPLIN  
WESTMAN CHAMPLIN & KELLY P A  
SUITE 1600 INTERNATIONAL CENTRE  
900 SECOND AVENUE SOUTH  
MINNEAPOLIS, MN 554023319

EXAMINER

KIM, PAUL L

ART UNIT

PAPER NUMBER

2857

DATE MAILED: 11/05/2002

NOV 12 2002

TAS

Please find below and/or attached an Office communication concerning this application or proceeding.

11W

DOCKETED	
RESPONSE DUE	2-5-03
CALENDARED	
CHECKED BY ATTY	5-5-03

# Office Action Summary

Application No.

09/383,828

Applicant(s)

ERYUREK ET AL.

Examiner

Paul L Kim

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-89 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,10,13-22,26,28-30,34,37-39,41-43,47,50-62 and 66-89 is/are rejected.
- 7) ☒ Claim(s) 3, 7-9, 11, 12, 23-25, 27, 31-33, 35, 36, 40, 44-46, 48, 49, and 63-65 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 4-10, 13-22, 26, 28-30, 34, 38, 39, 41-43, 47, 50-57, 59-61, 67-70, 71, 73-78, 80, and 82-88 are rejected under 35 U.S.C. 102(b) as being anticipated by Shanahan et al.

With regard to claims 1, 2, 59, and 67, Shanahan et al teaches a differential pressure transmitter and instructions for a computer readable medium (fig. 6, part 16) comprising: pressure sensors (fig. 6, part 10), AD converter (fig. 6, part 12), a microprocessor system storing a trained data set (fig. 6, part 16), a first algorithm that calculates a difference between a series of digital representations and a moving average (col. 7, lines 24-40), a second algorithm that calculates a trained set of historical data and generates diagnostic data as a function of current data relative to the historical data (abstract, lines 6-12 & col. 7, lines 44-47), a DA converter (fig. 6), and a digital communication circuit (fig. 6, "READ OUT" box).

With regard to claims 4, 28, 41, and 60, Shanahan et al teaches the trained data comprising statistical data on calculated difference (col. 7, lines 44-46).

With regard to claims 5, 29, and 42, Dutton teaches the microprocessor system switching from the training to the monitoring mode (col. 6, lines 5-10).

Art Unit: 2857

With regard to claim 6, Dutton teaches the microprocessor system storing the trained data in the training mode (col. 6, lines 9-10).

With regards to claims 10, 34, and 47, Shanahan et al teaches the flow output comprising a calibrated output and determining whether the pressure generator is out of calibration (col. 8, lines 8-18).

With regard to claims 13-15 and 50-52, Shanahan et al teaches the pressure transmitter being adapted to an averaging pitot tube (col. 7, lines 21-24) and inserted on a tap on the pipe (fig. 6).

With regard to claims 16 and 53, Shanahan et al teaches an instrument coupled between the generator and sensor (col. 1, lines 34-39).

With regard to claims 17-20, 54-57, 74-76, and 84-86, Shanahan et al teaches the primary flow elements and impulse lines being adapted to an orifice, venturi, and a nozzle (col. 5, lines 39-42).

With regard to claims 21, 22, 38, 39, and 68, Shanahan et al teaches a pressure transmitter comprising: a differential pressure sensor (fig. 6, part 10), a flow circuit coupled to the sensor (fig. 1, part 18), a difference circuit that generates an output that is based on a difference between a sensed pressure and a moving average (fig. 6, part 23), a calculate circuit that calculates a difference between historical data and current data (col. 6, part 27), and a diagnostic circuit (fig. 6, "READ OUT" box).

With regard to claim 26, Shanahan et al teaches the calculate circuit storing the historical data (col. 7, lines 58-60).

With regard to claim 30, Dutton teaches the calculate circuit storing historic data in the monitoring mode (col. 6, lines 14-17).

With regard to claim 43, Dutton teaches the calculate circuit storing historic data in the training mode (col. 7, lines 44-47).

With regard to claim 61, Shanahan et al teaches the current data set comprising data on the sample average and deviation of the calculated difference (figs. 4 & 5).

With regard to claims 69, 73, 77, 78, 80, 83, 87, and 88, Shanahan et al teaches a pressure transmitter comprising: a differential pressure sensor (fig. 6, part 10), an impulse piping configured to couple the sensor to the flow (fig. 6), a measurement circuit to calculate the flow of process fluid (fig. 6, part 16), a computation circuitry that calculates a statistical parameter of the sensor output (col. 7, lines 35-40), a memory that contains a baseline statistical parameter (col. 7, lines 45-47), a diagnostic circuitry configured to compare the statistical parameters and provide diagnostics if the difference exceeds a threshold (col. 7, lines 44-50), and an output circuitry (fig. 6, "READ OUT" box).

With regard to claims 70 and 82, Shanahan et al teaches the statistical parameter comprising standard deviation (col. 8, lines 43-48).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2857

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 62 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanahan et al in view of Britton et al.

Shanahan et al does not teach a sample average being compared to the mean. Britton et al teaches a pipe flow detector that diagnoses pipe conditions by comparing a sample average to the mean (col. 3, lines 56-61). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Shanahan et al, so that a sample average is compared to the mean, as taught by Britton et al, in order to obtain variations of sample flow measurements.

5. Claims 37, 58, 66, 71, 72, 79, 81, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanahan et al in further view of Di Marco et al.

Shanahan et al does not teach a diagnostic algorithm being a neural network, fuzzy logic, wavelet, or Fourier transform. Di Marco et al teaches a fluid flow analyzer where the diagnostic circuit uses fuzzy logic (col. 6, lines 46-50). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to modify Shanahan et al, so that the diagnostic circuit of the pressure transmitter uses a diagnostic algorithm, such as fuzzy logic, as taught by Di Marco et al in order to more accurately analyze flow measurements.

***Allowable Subject Matter***

Art Unit: 2857

6. Claims 3, 7-9, 11, 12, 23-25, 27, 31-33, 35, 36, 40, 44-46, 48, 49, and 63-65 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Response to Arguments***

7. Applicant's arguments with respect to claims 1-89 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Kim whose telephone number is 703-305-7468. The examiner can normally be reached on Monday-Thursday 10:00-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on 703-308-1677. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-4440 for regular communications and for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

PK  
November 2, 2002

  
MARC S. HOFF  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800